# NASA GSFC
# Wallops Flight Facility
# Cubesat Collaboration with NSF

Scott H. Schaire
Project Manager
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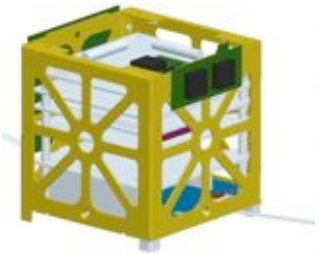

# WFF Cubesat Capabilities

- Experience in managing/building small, low-cost missions
  - Examples: UNEX/CHIPS, MPE development, GAS/Hitchhiker
  - Tailored design, I&T, review practices for low cost/higher risk missions (Class D)
  - Sounding Rockets, Balloons, Aircraft
- Technical Capabilities
  - Small Payload Engineering
  - Guidance, Navigation and Control
  - Communication
  - Balloon Bus Software (Class D Flight)
- Renowned customer focused capabilities supporting external principal investigators (PI's)
- Environmental test, integration and manufacturing facilities
- Multiple Payload Ejector
- Cubesat integration and manifest experience with Tacsat-3
- Launch Range
- Relationships with ORS, AFRL, Orbital

# WFF CubeSat Services

- Vehicle Integration support
  - ✓ Bi-weekly phone calls with Launch Provider
  - ✓ Assistance with required documentation
    - Safety
    - Object Debris and Reentry Analysis
    - Ground Operations
    - Reviews
- Frequency Licensing Support
  - ✓ NASA Frequencies Only
  - ✓ Cubesat Only
- Cal Poly Equipment and Services
  - ✓ P-POD's
  - ✓ Test Support
  - ✓ Interface Control Documentation
- Facility and test equipment usage
  - ✓ Thermal Vacuum
  - ✓ Vibration
  - ✓ Mass Properties
- Support for Internal and External Reviews
  - ✓ Requirements
  - ✓ Design
  - ✓ Status
  - ✓ Readiness
  - ✓ Pre-Ship

# Educational Outreach

- Small payloads < 10 lbs
- Weather balloon launch up to 120,000 feet
  - ~$5,000
- Secondary on Sounding Rockets
  - ~$5,000 + ($500/lb - $3000/lb)
  - Wallops
  - White Sands
- High Altitude Student Platform Balloon
- RockOn! Sounding Rocket Workshop

## Educational Outreach Continued - Kentucky Space CubeSat on a Sounding Rocket

- SOCEM
  - Sub-
  - Orbital
  - CubeSat
  - Experimental
  - Mission